



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,036	05/30/2006	Yoshito Shimizu	L9289.06162	6003
52989	7590	07/02/2010	EXAMINER	
Dickinson Wright PLLC			PHAM, TIMOTHY X	
James E. Ledbetter, Esq.				
International Square			ART UNIT	PAPER NUMBER
1875 Eye Street, N.W., Suite 1200				2617
Washington, DC 20006				
			MAIL DATE	DELIVERY MODE
			07/02/2010	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/581,036	SHIMIZU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	TIMOTHY PHAM	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 24 May 2010.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 11-20 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 11-20 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____ .	6) <input type="checkbox"/> Other: _____ .

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 5/24/2010, with respect to the rejection(s) of claim(s) 11-20 under over Simmons (US 2004/0053586) in view of Anim-Appiah (US 2004/0100898) and Allott (US 2002/0160738); have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is moot.

### ***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 11-14, 16-20 are rejected under 35 U.S.C. 102(e) as being anticipated by MacNally (US Patent No. 5,516,185).

Regarding claims 17, 11, and 19, MacNally discloses a direct conversion reception method, a direct conversion reception apparatus, and a semiconductor integrated circuit apparatus respectively, for use in a system where transmit power varies between transmission signals by downlink transmit power control, the method comprising the steps of:

finding reception quality of a signal of a frame that is comprised of a plurality of time slots and has been received earlier, the reception quality being found on a per time slot basis (col. 2 lines 39-52; col. 4 lines 42-49; col. 5 lines 15-17);

estimating, based on the reception quality of individual time slots, gains for amplifying a signal of a frame that is going to be received, to a predetermined reference value, before a reception period of the signal that is going to be received, the gains being estimated on a per time

slot basis (col. 1 lines 58-65; col. 6 lines 49-49; e.g., the gain is allowed to increase/decrease until the  $(V_{p-p}(I)+V_{p-p}(Q))/2$  signal level is within a range, an inner range, for example, 0.3 to 0.8 volts, at an 8 dB window);

selecting a maximum gain in a same frame, from the gains of individual time slots, and, using the gains of individual time slots, performing gain control during the reception period of the frame that is going to be received, on a per time slot basis (col. 4 lines 43-49; col. 6 lines 25-30; 35-46; 58-60, e.g., peak detected over a certain time frame to determine its envelop); and

calibrating an offset voltage of the signal of the frame that is going to be received, on a per frame basis, before the reception period of the frame that is going to be received, using a calibration value matching the maximum gain selected (col. 2 lines 34-37; col. 3 lines 15-17; col. 4 lines 19-25, 42-49; col. 6 lines 38-60; e.g., The offset correction and automatic gain control system includes a feedback offset integrator which corrects the DC offset in a coarse fashion.

The offset integrator is controlled by a timing mechanism during a preamble period of the incoming signal).

Regarding claims 12, 18, and 20, MacNally discloses the reception apparatus, the direct conversion reception method, and the semiconductor integrated circuit apparatus in a direct conversion reception apparatus according to claims 11, 17, and 19 respectively, wherein:

the reception quality measurement section finds a reception field intensity that serves as a control reference in transmit power control for time slots, from the reception quality of individual time slots (col. 2 lines 39-52; col. 4 lines 42-49; col. 5 lines 15-17); and the gain estimation section estimates the reception field intensities of individual time slots of the frame that is going to be received, from the reception field intensity and transmit power

information of individual time slots of the frame that has been received earlier, the transmit power information being included in demodulated data of the frame that has been received earlier, and estimates the gains of individual time slots according to the reception field intensities of the time slots of the frame that is going to be received (col. 1 lines 58-65; col. 6 lines 49-49).

Regarding claim 13, MacNally discloses the reception apparatus according to claim 11, wherein, when a difference between an average gain of the gains of individual time slots in a reception period of the frame that has been received earlier, and a minimum gain among the gains of individual time slots in the reception period of the frame that has been received earlier, is equal to or greater than a threshold, the gain estimation section estimates the gains of individual time slots of the frame that is going to be received, by excluding a measurement value of the time slot of the minimum gain (col. 1 lines 58-65; col. 6 lines 49-54, e.g., At the start of a data burst, the gain is allowed to increase/decrease until the  $(V_{p-p}(I)+V_{p-p}(Q))/2$  signal level is within a range, an inner range, for example, 0.3 to 0.8 volts, at an 8 dB window).

Regarding claim 14, MacNally discloses the reception apparatus according to claim 11, wherein, when a difference between a maximum gain among the gains of individual time slots in a reception period of the frame that has been received earlier, and a minimum gain among the gains of individual time slots in the reception period of the frame that has been received earlier, is equal to or greater than a threshold, the gain estimation section estimates the gains of individual time slots of the frame that is going to be received, by excluding a measurement value of the time slot of the minimum gain (col. 6 lines 55-60; e.g., the gain control window is regulated to move outward to the outer range, e.g. 0.15 to 1.6 volts. As is the case for the offset

control, the gain control allows the gain to adjust if the peak to peak signal level goes outside the outer range of the signal level).

Regarding claim 16, MacNally discloses the reception apparatus according to claim 12, wherein:

the gain estimation section sequentially sets the gains for amplifying a received signal to the predetermined reference value through a plurality of stages, in the reception period of the frame that is going to be received, on a per stage basis, such that a gain in an earlier stage in the plurality of stages is equal to or greater than a gain in a later stage (col. 5 lines 35-44; col. 8 lines 19-20, 27-39, e.g., if the automatic gain controller determines to hold the gain, a control signal to hold the gain is sent to the LNAs, the mixers, the anti-alias filters, the switched capacitor filters/amplifiers, and the last stage gain amplifier for the operations 504, 506, 508, 510, and 512, respectively); and

the gain control section performs gain control of the received signal on a per stage basis in the reception period of the frame that is going to be received, using the gains of individual stages set in the gain estimation section (col. 5 lines 35-44; col. 8 lines 19-20, 27-39).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacNally in view of Shi et al. (US 2004/0081256).

Regarding claim 15, MacNally discloses the reception apparatus according to claim 12, fails to specifically disclose wherein the gain estimation section subtracts increment and decrement values of transmit power indicated in the transmit power information from the reception field intensity on a per time slot basis and estimates transmit powers of individual time slots, and estimates the gains of individual time slots for amplifying a received signal of an estimated transmit power to the predetermined reference value.

However, Shi discloses the gain estimation section subtracts increment and decrement values of transmit power indicated in the transmit power information from the reception field intensity on a per time slot basis and estimates transmit powers of individual time slots, and estimates the gains of individual time slots for amplifying a received signal of an estimated transmit power to the predetermined reference value (paragraphs [0038], [0040], e.g., Based on this determined gain setting, the gain of the low noise amplifier 102 and/or the gain of the programmable amplifiers 124 and 126 are adjusted. For example, if the RSSI indicates a weak signal strength, the corresponding gains will be increased, if the RSSI indicates a strong signal strength, the corresponding gains will be decreased. At this point, the receiver turns off antenna 72).

Therefore, taking the teachings of MacNally in combination of Shi as a whole, it would have been obvious to one having ordinary skill in the art at the time of the invention by applicant to subtract increment and decrement values of transmit power indicated in the transmit power information from the reception field intensity on a per time slot basis and to estimate the gains of

individual time slots for amplifying a received signal of an estimated transmit power to the predetermined reference value for advantages of controlling output power saturation which occurs between each amplification.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY PHAM whose telephone number is (571)270-7115. The examiner can normally be reached on Monday-Friday; 7:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent P. Harper can be reached on 571-272-7605. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Timothy Pham/  
Examiner, Art Unit 2617

/VINCENT P. HARPER/  
Supervisory Patent Examiner, Art Unit  
2617